Dell Networking

Quick Reference Guide

Learn more at dell.com/networking

Last update: 20120501

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Fixed port switch comparison

Data center switching

Speed	Model	Overview	Capacity and ports		Data center: Core	Data center: Aggregation / Layer 3	Data center: Top-of-Rack	Campus LAN: Aggregation / Layer 3	Campus LAN: Edge / Layer 2	Campus LAN: Branch office	Campus LAN: Small office	Features: PoE / PoE+	Features: Stacking (maximum stack)	Features: Open Automation*	Features: Hot-swap power	Features: Redundant power	Features: Airflow option**	Warranty
10/40 GbE	Z9000	High-performance, massively scalable, distributed core (leaf-spine) switch delivers industry-leading capacity in a 2RU footprint.	2.5 Tbps	32 ports 40 GbE or 128 ports 10 GbE	●	●								✓	✓	✓		1 yr
	S4810	Low latency switch and building block of distributed core architecture ideal for high-performance storage and compute.	1.28 Tbps	48 ports 10 GbE and four 40 GbE QSFP+ uplinks	●	●	●						3	✓	✓	✓	✓	1 yr
1/10 GbE High Capacity	S55	High-performance, low latency, and low power switch optimized for top -of-rack deployments.	192 Gbps	44 ports Base-T and four SFP/SFP+ uplinks		●	●						8	✓	✓	✓	✓	5 yr
	S60	Purpose-built with 1.25 Gb of deep buffer memory to smooth out traffic spikes and reduce packet loss associated with high-demand apps.	176 Gbps	44 ports Base-T and four SFP/SFP+ uplinks		●	●						12	✓	✓	✓	✓	5 yr
	S25/50 Series	Transform your data center and deliver critical functionality and throughput to the network edge.	144/ 288 Gbps	24/48 ports Base-T or 24 ports SFP/Base-FX SFP, four XFP or CX4 uplinks		●	●					P	8		✓	✓	✓	5 yr

Campus LAN switching

10 GbE	8000 Series	High throughput for medium/large enterprise LAN, distributed branch offices or small core networks.	480 Gbps	24 ports 10Gbase-T with 4 SFP+ combo ports or 24 Ports SFP+ with four 10Gbase-T combo ports				●					6		✓	✓		Life
1/10 GbE Standard	7000 Series	High density performance with energy-efficiency & high-availability for enterprise LAN, server aggregation, and wiring closets	176/ 224 Gbps	24/48 ports Base-T or 24 ports SFP, four combo ports, and dual 10G slots supporting 4 ports of 10Gbase-T, SFP+, or CX4				●	●	●		P+	12		R	R E	R	Life
	6200 Series	Flexible performance and value for small to medium-sized businesses and branch office wiring closets.	136/ 184 Gbps	24/48 ports Base-T or 24 ports SFP, four combo ports, and dual 10G slots supporting 4 ports of 10Gbase-T, SFP+, CX4, or XFP				●	●	●		P	12			E		Life
	5500 Series	Advanced end-user and workgroup connectivity with energy-efficiency and scalability.	128/ 176 Gbps	24/48 ports Base-T, two SFP+ uplinks					●	●		P	8			E		Life
1 GbE	2800 Series	Quiet and simple to manage for small offices connecting PCs and peripherals at faster Gigabit speeds.	16-96 Gbps	8-48 ports with SFP combo ports (varies by model)					●	●	●							Life
100 Mb	3500 Series	Entry-level switch connectivity where full management capabilities are a priority over speed.	12.8/ 17.6 Gbps	24/48 ports Base-T, with 2 SFP copper or fiber uplinks					●	●	●	P	8			E		Life

● Recommended deployment

*Open Automation is an advanced software suite of network management tools. E = External redundant power supply optional. R = 7048R model only. Life = Lifetime Warranty (hardware repair or replacement) for life. Info at: **dell.com/lifetimewarranty** **Air flow direction (front to rear or rear to front) must be selected upon ordering. Airflow for 7048R model is reversible. Power-over-Ethernet (PoE/PoE+) available on select models.

Last update: Dell Networking Quick Reference Guide 20120501

Distributed core solutions

Fabrics for any size data center

Dell distributed core architecture is based on Z9000 and S4810 switches which are purpose-built for leaf-spine designs. These distributed core fabrics scale to support thousands of 10 GbE server and storage ports. The designs are non-blocking and enable hosts to transmit and receive data at full interface capacity. The architecture eliminates the need for expensive chassis-based products and allows you to collapse the core and aggregation layers, resulting in a simpler and more efficient network.

Distributed core design options

Z9000 and S4810 building blocks

Design a fabric that fits your workload needs.

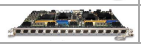
Fabric size	Spine switches	Leaf switches	User ports
Extra large	16 x Z9000	32 x Z9000	2,048 x 10 GbE non-blocking or 512 x 40 GbE non-blocking
Large	4 x Z9000	32 x S4810	1,536 x 10 GbE 3:1 over-subscription
Medium	4 x S4810	12 x S4810	576 x 10 GbE 3:1 over-subscription
Small	2 x S4810	4 x S4810	128 x 10 GbE non-blocking

Modular core & aggregation systems

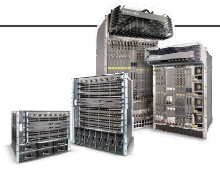
High-density one and 10 Gigabit chassis

Deployment	Capacity and ports	Model	Line cards
Data center core and aggregation	3.5 Tbps, 560 ports 10 GbE (140*), 1,260 ports GbE	E1200i	14
	1.75 Tbps, 280 ports 10 GbE (70*), 630 ports GbE	E600i	7
Campus LAN & wiring closets (PoE capable)	1.536 Tbps, 64 ports 10 GbE, 384 ports GbE	C300	8
	768 Gbps, 32 ports 10 GbE, 192 ports GbE	C150	4

All ports are full non-blocking throughput unless noted. *Maximum ports at line-rate speed.

Best selling line cards (E-Series)		Best selling line cards (C-Series)	
10 GbE (10 port SFP+ or XFP)		10 GbE (4 or 8 ports XFP)	
GbE (50 port SFP)		10/100/1000 (48 port Base-T with PoE)	
10/100/1000 (90 port Base-T)		10 GbE FlexMedia (36 ports Base-T, 8 SFP, and 2 SFP+)	

More line card options for both E and C Series chassis available.



The E-Series and C-Series chassis systems provide flexible, high-density 1/10 GbE connectivity for data centers and enterprise LANs. The E-Series is ideal for cost-effective collapsed core designs and large-scale aggregation capabilities. The C-Series is best-suited for data center end-of-row and aggregation applications. The C-Series also supports Power-over-Ethernet which is ideal for campus LAN and wiring closet environments.

Fibre Channel

Leading connectivity options for your SAN

Capacity and ports	Model
16 Gbps, (24, 36, or 48 ports)	Brocade 6510
8 Gbps, (24 ports DCB/FCoE & 8 ports FC)	B-8000
8 Gbps, (48, 64 or 80 ports)	Brocade 5300
8 Gbps, (24, 32 or 40 ports)	Brocade 5100
4 or 8 Gbps, (8, 16, or 24 ports)	Brocade 300
Modular, 8 Gbps, (192 ports)(supports DCB/FCoE)	DCX 4S
Modular, 16 Gbps, (192 or 384 ports)	DCX 8510

Blade Interconnects

Transforming your Dell M1000e blade server enclosure

Capacity and ports	Model
1/10/40 GbE with FCoE transit (56 ports with two FlexIO modules)	Force10 MXL
1/10 GbE with FCoE transit (24 ports with one FlexIO module)	M8024-k
10 GbE (24 ports) and 8 Gbps FC (4 ports)	M8428-k
1/10 GbE (48 ports)	M6348
1/10 GbE (20 ports with two FlexIO modules)	M6220
8 Gbps Fibre Channel (12 or 24 ports)	M5424

Find more blade interconnects, HBAs, and NICs on **dell.com**

- Represents converged networking capability.

Dell Networking
Quick Reference Guide

The Dell W-Series portfolio is a leading connectivity solution for enterprise mobility which is highly secure, simple to deploy, and easy to manage. Dell W-series provides highly differentiated context aware access policies based on type of user, device, application and location. Enable optimized delivery of e-mail, real-time telephony, and video conferencing to wireless devices with the Dell W-Series portfolio. More information at: **dell.com/wireless**

Wireless Controllers

Deployment	Overview	Model	Maximum users	Maximum devices supported	Firewall throughput
Large enterprises or campuses	Modular chassis with redundant power, fans, and four controller modules.	W-6000 chassis W-6000M3 module	32,768 users or 8,192 per module	Control 2,048 APs or 4,096 RAPs (Each module supports 512 APs or 1,024 RAPs)	80 Gbps (20 Gbps per module)
Mid-sized enterprise	Deliver a wide range of network services to medium to large regional offices.	W-3600	8,192 users	Control 128 APs or 512 RAPs	4 Gbps
		W-3400	4,096 users	Control 64 APs or 256 RAPs	4 Gbps
		W-3200	2,048 users	Control 32 APs or 128 RAPs	3 Gbps
Small office or Branch office	Entry-level simplicity with enterprise-class functionality.	W-650	512 users	Control 16 APs or 64 RAPs	2 Gbps
		W-620	256 users	Control 8 APs or 32 RAPs	800 Mbps

Wireless Access Points

Dell PowerConnect W-Series APs are available in two types: Thin and Instant. Thin APs require a W-Series controller, and Instant APs have an integrated virtualized controller which are ideal for entry-level networks. Both types of APs maximize performance for mobile devices, provide strong integrated Wi-Fi security and include an Extended Lifetime Warranty.

Thin AP (controller required) | **Instant AP** (built-in controller)

Deployment	Overview	Capacity	Model	Model	Antennas
Designed for indoor use and powered by Power-over-Ethernet or AC adapters	Ultra high-performance Wi-Fi access designed for high-density.	900 Mbps, Dual radio, Dual band	W-AP135	W-IAP135	6 integrated (3x3 MIMO)
			W-AP134	W-IAP134	3 external interfaces (3x3 MIMO)
	Mainstream Wi-Fi access with dual radios and dual band function to separate traffic flows.	600 Mbps, Dual radio, Dual band	W-AP125	-	3 integrated (3x3 MIMO)
			W-AP124	-	3 external interfaces (3x3 MIMO)
			W-AP105	W-IAP105	4 integrated (2x2 MIMO)
			W-AP104	-	4 external interfaces (2x2 MIMO)
	High performance Wi-Fi access with added flexibility of a dual band to eliminate interference.	300 Mbps, Single radio, Dual band	W-AP93	W-IAP93	2 integrated (2x2 MIMO)
			W-AP92	W-IAP92	2 external interfaces (2x2 MIMO)
	Entry-level Wi-Fi designed for small, low-density deployments.	150 Mbps, Single radio, Single band	W-AP68†	-	One integrated antenna †No extended life warranty
Indoor, Wired + Wireless scenarios	Provide both Wi-Fi and wired connections in one device.	300 Mbps, Single radio, Dual band	W-AP93H	-	2 integrated (2x2 MIMO) Includes four RJ45 ports 100 Mbps
Outdoor or industrial settings	Ruggedized and weatherproof with flexible power options.	300 Mbps, Dual radio, Dual band	W-AP175† (PoE, AC/DC)	-	4 external interfaces †No extended life warranty

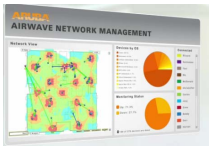
Flexible mounting kits, external antennas & AC adapters available. AP models with external antenna interfaces work best for special deployment situations.

Wireless Guest Access & BYOD

ClearPass GuestConnect is a best-in-class Visitor Management and BYOD (Bring Your Own Device) system. This easy-to-use solution allows you to deliver wireless network access to guests, employees and their devices. Available as either a dedicated hardware appliance or as a virtual appliance software.

Model	Capacity	Details
CPGC 2500	From 2,500 to 25,000 users	Dell server pre-loaded with 2,500 licenses, expandable to 25,000
CPGC 100	From 100 to 5,000 users	Dell server pre-loaded with 100 licenses, expandable to 5,000
CPGC SW 100	From 100 to 10,000 users	Software only (Virtual machine for VMware™)

AirWave Network Management



Multi-vendor network management software that delivers a consolidated view of: the RF environment, controllers, access points, and the wired infrastructure, with an intuitive user interface.

Virtual Internet Access (VIA)

This software provides secure network connectivity for remote users. But unlike legacy VPNs, the VIA software intelligently configures Wi-Fi settings to ensure a consistent user experience as clients access the network.

Data center network automation

Open Automation

The Dell Force10 Open Automation framework provides an open standards-based automation solution for data center operations. The Open Automation Framework is a suite of inter-related network management tools that can be used together or independently. These tools provide data center managers with a complete set of capabilities required in today's dynamic, virtual data center environments.

Bare Metal Provisioning

Automatic network switch configuration
- Reduce installation time
- Enforce standard configurations
- Eliminate configuration errors
- Simplify OS upgrades

Smart Scripting

Perl & Python scripting environment for custom monitoring and management
- Increase network uptime
- Reduce time for problem resolution
- Improve configuration mgmt and auditing

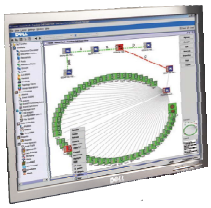
Virtual Server Networking

Hyper-visor switch communications to ease Virtual Machine/Virtual LAN mgmt
- Increase data center flexibility
- Maintain network connectivity and security with VM migration
- Reduce OpEx

Programmatic Management

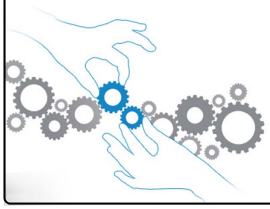
Seamless integration with programmatic interfaces and system management tools
- Simplify network management
- Minimize number of management tools
- Reduce OpEx

Networking Management



Simplify the complex
As your infrastructure gets larger and more complex, it can be a real headache to keep track of every device in your network. You need to know the status of those devices, how they are performing, and have the ability to manage their configuration for optimal performance. With Dell you are able to regain control of the network with **OpenManage Network Manager**. View complete physical and logical inventories of your network, get detailed connectivity information of each device, and automate network functions. **Try it for free**. Information at **dell.com/networkmanager**

Advanced Infrastructure Manager



Make your server, storage and networking infrastructure a seamless fabric of resources with the help of Dell Advanced Infrastructure Manager™ (AIM). You can create a simplified, flexible data center infrastructure that supports workload mobility and allows for rapid deployment and speedy disaster recovery. Use AIM's integration packages to expand functionality with other existing software investments.

Dell AIM lets you move work-loads and repurpose servers in minutes. AIM can also help you manage each server's network connectivity, storage (SAN/ iSCSI) access and power state.

Networking Services

Whether you are seeking product support or complete IT outsourcing, Dell can deliver services based on your need.

Consulting services
Achieve better business outcomes with professional guidance pertaining to your network. Improve network performance, add functionality, and leverage existing infrastructure to maximize your investment.

Deployment services
Let us install and correctly optimize your network with a comprehensive set of remote and onsite deployment services.

Managed services
Free yourself to focus on your business and allow Dell to fully manage and monitor your multi-vendor network with triage, resolution, and tier 2 and 3 engineering support.

Support Services
Gain access to service professionals 24 hours a day who help you configure, troubleshoot, and diagnose your network. Dell ProSupport™ experts also help resolve complex issues related to third-party connectivity to Cisco, Brocade, Juniper, HP, and Aruba.

Learn more at dell.com/networking